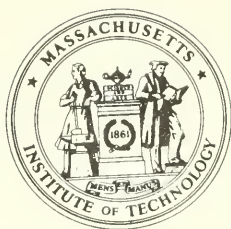
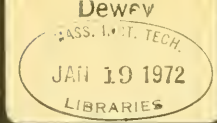


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Involvement with the University
and
The Development of Self-Directed Learners *

by
Irwin M. Rubin and Hervey L. Sweetwood

Working Paper 571-71

November 1971

MASSACHUSETTS
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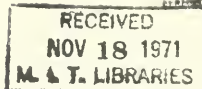
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- * The research reported in this paper is part of a larger study of Freshman Socialization at M.I.T. supported by funds from the Edwin P. Land Fund. The data to be reported were analyzed as part of an unpublished masters thesis, by Sweetwood (1971). Computation was done at the M.I.T. Computation Center.

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INTRODUCTION

This paper is part of a larger study concerned with understanding the process of socialization and adaptation to the university. The sample under investigation is the M.I.T. class of 1973. Several areas have been investigated:

- 1) The effect of social class background factors on adaptation patterns, satisfaction with the Institute and performance (Bumstead, 1971).
- 2) Satisfaction and performance have been related to the extent to which a student feels meaningfully connected to the Institute (Rubin, 1971).
- 3) A set of adaptive styles have been defined and compared as to their relative success on a variety of dimensions (Gerstein, 1971).

In this paper we will try to relate a person's degree of involvement with the Institute, to the degree to which he adopts a self-directed learning posture. We will use the taking of a Freshman Seminar as one behavioral indication of self-directed learning. The effectiveness of this particular option (Freshman Seminar) in producing high involvement will be related to certain needs and expectations of those who have chosen to take the option. Finally, we will try to generalize from this specific situation to the broader question of the development of self-directed learners.

THEORETICAL FRAMEWORK

M.I.T.'s Objective: Self-Directed Learning

In addition to facilitating an individual's cognitive development in a variety of areas, a major objective at M.I.T., as articulated by Paul Gray, is the development of "an academic environment in which the primary task focuses on the objective of individual growth and the development of a real capacity for self- education, for self-sufficiency, and for self-renewal..." In essence, Gray describes the ideal learning community as one that produces or develops the capacity for self-directed learning. But then what is this self-

directed learner really like? What norms govern his behavior? To help answer these questions, let's look at Carl Roger's definition of self-directed learning.

[Self-directed learning] has a quality of personal involvement -- the whole person in both his feeling and cognitive aspects being in the learning event. It is self-initiated. Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within. It is pervasive. It makes a difference in the behavior, the attitudes, perhaps even the personality of the learner. It is evaluated by the learner. He knows whether it is meeting his need, whether it leads toward what he wants to know, whether it illuminates the dark area of ignorance he is experiencing. The locus of evaluation, we might say, resides definitely in the learner. Its essence is meaning. When such learning takes place, the element of meaning to the learner is built into the whole experience (Rogers, 1969, p. 5).

These are the ideals toward which M.I.T. is attempting to move, with the ideal learning community functioning to support the student in his attempt to develop a self-directed learning orientation.

Individual/University Involvement and the Concept of Adaptive Style

Although self-directed learning, as we can see from the above, is highly personalized, it does take place within a context. The individual, in other words, interacts with the M.I.T. community and it is the intent that, as a result of these interactions, he develop a self-directed posture toward learning. We know, however, that this intent is not realized with all students. Many students develop a different posture. In addition to the self-directed posture, four other styles have been identified; conformist, rebel, withdrawn, and counter-cultural (Gerstein, 1971).

Furthermore, we have argued (Rubin, 1971) that in order for the self-directed posture to develop, the interactions^{*} between the individual and the Institute must result in two things: the student must experience a sense of purpose or

* We have called this complex dynamic process of interaction the development of a psychological contract. The student expects certain things of M.I.T. and M.I.T. provides certain opportunities. If individual expectations are continuously not satisfied by organizational contributions - if a mutually satisfactory psychological contract fails to develop - the individual becomes alienated from the organization. The reverse also exists if the student fails to meet the organization's expectations, e.g., grades, units accumulated or adherence to certain rules of behavior.

community (low anomie) and 2) a sense that the authority of the ~~system is legitimate~~ (low political alienation). These two factors have been found to exist in varying degrees among people and the particular combination of the two helps to define a given adaptive style (Gerstein, 1971).

For our purposes in this paper, we will combine the rebel, withdrawn, and counter-cultural styles into one we call alienated. This reduces the number of discrete types with which we must deal. In addition, it makes our previously developed typology of adaptive styles (Gerstein, 1971) similar to a broader framework developed by Etzioni (1961) to deal with the way in which an individual can become involved with any organization (Rubin, 1971; Sweetwood, 1971). Etzioni distinguishes three forms of involvement: moral, calculative, and alienative. These can be defined in terms of their meaning in the M.I.T. environment as follows:

Moral (self-directed) - This student has internalized the norms of the M.I.T. community -- he feels a sense of self-direction, a sense of purpose and meaning in his own life and in his relationship to M.I.T.; he values M.I.T. in general and the faculty in particular as a legitimate source of influence over his attitudes and behavior.

Calculative (conformist) - This student accepts M.I.T. and its representatives, the faculty, as valid sources of authority, but he hasn't internalized the norms of the community and thus reacts and conforms to the most easily identifiable norms of the system such as grades, dress, etc.

Alienative (rebel, withdrawn, and counter-cultural) - This student has been unable to internalize the norms of the M.I.T. community and has also rejected M.I.T. as a legitimate source of influence over his attitudes and behavior. He remains within the system only because he feels "coerced" by influences such as the draft, parental and/or societal expectations, or simply because

he never expected to get involved.

Morally involved individuals, for example, intrinsically value the mission of the organization and/or their role within it. It is most appropriate in those situations where intense individual commitment is required or where the individual is doing a task (e.g., growing, developing, learning) that is not easily measured by external sources. Such involvement is based entirely on participant internalization of system norms (directly analogous to our concept of anomie) and positive identification with authority (directly analogous to our concept of political alienation). The qualities of moral involvement and self-directed learning are markedly overlapping.

Our major hypotheses would be, therefore, that self-directed learning behavior is more likely to result if the individual experiences a sense of moral involvement through his interaction with the M.I.T. community.

THE SPECIFIC SITUATION AND HYPOTHESES

The Freshman Seminar

It is clear from Snyder's research (1971), for example, that while the publicly stated norm at M.I.T. may be that of developing self-directed learners, the implementation of this norm is not uniform. The overall environment at M.I.T. (courses, workloads, learning processes, teacher styles, grading procedures, etc.) can and often does communicate norms which are in conflict with the objective of developing moral involvement and self-direction.

For the purposes of this research, we have chosen to focus on one particular subsystem within the M.I.T. community - the Freshman Seminar. By focusing on the

Freshman Seminar, we have taken an environment that, in and of itself, clearly conveys and supports the norm of self-directed learning. This assumption is based on the following characteristics of the Freshman Seminar:¹

1. Close student-faculty contact.² There are 6-10 students in most seminars with several running to about 30 students. A major purpose of the seminar program is to develop student-faculty relationships.

2. High level of student and faculty interest. The Freshman Seminar is optional for both the student and the faculty member. Faculty members offer seminars in their current area of interest only, and students usually have from 30 to 50 different topics from which to choose -- with the freedom not to take any if they so desire.

3. Freedom from external pressure. The seminar has no required body of knowledge to master or book to finish. There are few requirements of the students, and there is maximum freedom to follow divergent interests as they develop. The faculty encourage and support such interests. The grading system is pass-fail³, and students have complete freedom to terminate the relationship -- i.e., they drop the Seminar with little consequence since it is only a six unit course.

We will assume that the act of taking a seminar is one behavioral indication of a self-directed posture toward learning. Seminar takers are more likely to be morally involved (and less likely to be alienatively involved) than non-seminar takers. We will first focus on those students who did have a seminar experience the first semester. We will then look at this group's second semester behavior (return rate). If the student continues his seminar taking behavior, his first semester seminar experience is rated as congruent. If the student drops out of the seminar program second semester (i.e., he decides not to take any of the seminars offered spring term), then his first semester experience is

judged incongruent (i.e., it did not meet his initial expectations of what a seminar would be like). Obviously this is a rather crude measure since there exist many reasons for not continuing in the seminar program, such as lack of interest in the spring term topics, lack of time, the development of other more exciting interests, etc.

Our hypothesis would be that morally involved students are more likely to choose to take a second seminar (to return). Alienatively involved students are more likely to "drop out" of Freshman Seminars after their first experience.*

Student Needs

The Freshman Seminar environment provides certain opportunities to students and "requires" certain behavior of them. The structure of the teaching-learning process within the seminar context would appear to be most attractive to students who expect to/enjoy playing an active part in the learning process.** High levels of student participation and contribution would seem to be salient requirements. Our general hypothesis would be that when the characteristics of the environment are congruent (match) with the individual's needs and expectations, moral involvement is more likely to occur. Specifically, moral involvement is more likely to be characteristic (and conversely, alienative involvement is less characteristic) among those individuals who have both a high need to participate and who do take a seminar.

The hypotheses, as stated, do not identify the cause of the high concentration of morally involved students among the seminar takers. This could happen via self-

* Within the sample available (N=408), 172 people took a seminar first semester. Of those who took a seminar first semester, 36% (N=62) also took a seminar second semester.

** In addition, one might expect that the small class size and informal atmosphere would represent an opportunity for some students to satisfy their social, affiliative, inclusion needs. In this paper, we focus specifically on a student's expectation concerning participation. The indications are (Gerstein 1971, Sweetwood, 1971) that students more often use non-classroom situations (e.g., living groups) to satisfy these social needs.

selection (morally involved students choose the seminar) or via the effects of the seminar environment on the student. All that our data will allow us to test directly is whether any association exists between the two. These relationships are summarized in figure 1.

RESEARCH DESIGN AND OPERATIONAL DEFINITIONS

Research Design

Data to test the above hypotheses were collected as part of a larger study of the class of 1973. Questionnaires were sent to the entire Freshman class and 45% were returned in usable form. The scales to which we refer in the next sections were a part of the longer questionnaire. All were adapted to be specifically relevant to M.I.T. For more detail on the particular methodology and a copy of the entire questionnaire see Sweetwood (1971) and Rubin (1971).

Form of Involvement

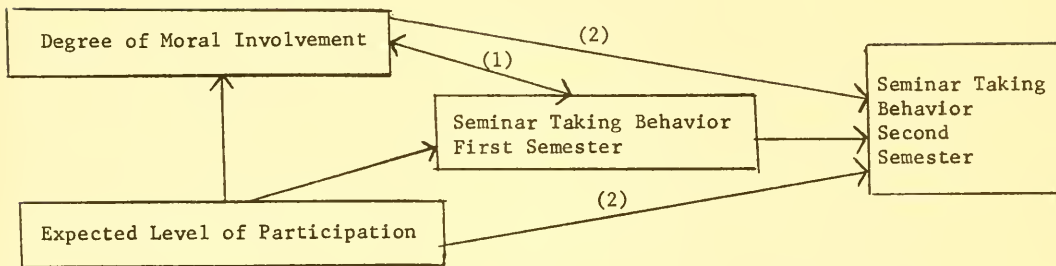
Earlier, we argued that moral, calculative, and alienative involvement could be differentiated along two dimensions...the student's feelings toward M.I.T. as a legitimate source of authority or influence and the degree to which the student was able to internalize the M.I.T. community's norms. Two measures were chosen to approximate these dimensions, Olsen's (1969) scale of political alienation and McClosky and Schaar's (1965) scale of anomie, respectively. ^{*} The resulting scale items used to measure these two dimensions are reproduced in Table 1.

The student who felt M.I.T. was not a legitimate source of influence or authority would agree with such items as, "These days M.I.T. is trying to do too many things, including some activities that I don't think it has the right to do," and "M.I.T. is run by the few people in power and there is not much the student can do about it." Conversely, our student with a high sense of system legitimacy corresponds to the non-alienated student who strongly

* Gerstein (1971) uses these same scales to help develop his typology of adaptive styles. As we pointed out, forms of involvement and adaptive style are conceptually synonymous.

Figure 1.

Flow Chart of Relationships Between Involvement,
Expected Level of Participation and Seminar Taking
Behavior



- (1) The double headed arrow implies that seminar taking can lead to moral involvement, morally involved students are more likely to take a seminar (selection effect), or both are operating in a dynamic process.
- (2) The cause-effect relationships are somewhat clearer with respect to second semester seminar behavior. While the student had his first semester seminar experience before we collected data concerning his involvement etc., he was just beginning his second seminar experience.

disagrees with these scale items.

A highly anomic student would strongly agree with such scale items as "The trouble with the university today is that most people don't believe in anything" and "Everything changes so quickly these days at M.I.T. that I often have trouble deciding which are the right rules to follow." Clearly, the highly anomic student has not been successful in internalizing any set of norms, the second aspect of moral involvement. On the other hand, the M.I.T. student who scores low on anomie has been able to internalize some set of norms, but not necessarily the M.I.T. learning norms in which we are interested. To distinguish the internalization of positive M.I.T. learning norms vs. some sort of "counter-cultural" norms or norms negatively oriented in relation to M.I.T., the student's system legitimacy score will be used.

If the student is low in anomie and has a high degree of faith in the M.I.T. system, then he is considered to have successfully internalized the desired M.I.T. norms (self-directed learning). If the student is low in anomie but has a low degree of system legitimacy, then he is considered to have internalized some "counter-cultural" set of norms.⁴

Earlier we defined the moral student to be high in system legitimacy and to have successfully internalized the M.I.T. community norms; the calculative student was similar to the moral student, except that he had been unable to internalize M.I.T.'s norms; finally, the alienative student not only was unable to internalize M.I.T.'s learning norms, but also rejected the legitimacy of the entire system. Operationally, then, these students will be defined as follows:

1. Moral - high system legitimacy, low anomie
2. Calculative - high system legitimacy, high anomie
3. Alienative - low system legitimacy, high or low anomie

TABLE 1

Questionnaire Items Used to Measure the Extent to Which an Individual Has Internalized M.I.T.'s Norms and the Extent to Which He Sees M.I.T. as a Legitimate Source of Authority

Internalization of Norms * (Anomie)

With everything in such a state of disorder at M.I.T., it's hard for a student to know where he stands.

I often feel awkward and out of place at M.I.T.

What is lacking in the university today is the kind of friendship that lasts for a lifetime.

It seems to me that other students at M.I.T. find it easier to decide what is right than I do.

Students were better off in the days when everybody knew just how he was expected to act.

Everything changes so quickly these days at M.I.T. that I often have trouble deciding which are the right rules to follow.

The trouble with the university today is that most people don't believe in anything.

Legitimacy of Authority * (Political Alienation)

It seems to me that M.I.T. often fails to take necessary actions on important matters even when most people favor such actions.

For the most part M.I.T. serves the interests of a few organized groups and isn't very concerned about the needs of people like myself.

As M.I.T. is now, I think it is hopelessly incapable of dealing with all the crucial problems facing the university today.

M.I.T. is run by the few people in power and there is not much the student can do about it.

It is difficult for people to have much control over the things officials do in office.

These days M.I.T. is trying to do too many things, including some activities that I don't think it has a right to do.

* The response format was a six point scale ranging from strongly disagree to strongly agreed. The distinction between high and low is based on a dichotomous splitting of the sample at or about the median score for the entire group.

Using this categorization scheme, the distribution of the three involvement types is as follows:

	Frequency
1. Moral	33% (134)
2. Calculative	20% (82)
3. Alienative	47% (192)

(1) Student's Expected Level of Participation. As a measure of the student's expected level of participation, the student's response to the following question⁶ was used.

"People have different ideas of just how they fit into university affairs. Would you say that you are:

- High - 1. A person who contributes to classrooms or living group decisions.
- Average 2. A person who is active, but not one of the decision-makers.
- Low - 3. Just an ordinary person in the university.
- 4. A person who rarely participates in institute life.
- 5. Not a part of the university at all."

The five possible responses were combined to three categories of approximately equal size. Response #1 was labeled high, response #2 average, and responses #3, #4, and #5 were grouped together to form a low category. The frequency of response to the high, average, and low participation categories was as follows:

* These data are not meant to suggest that this is representative of the "actual" distribution at M.I.T. This categorization merely represents a relative distribution of students into groups that are more alienative, more moral, or more calculative than the others, given our definitions and measures. The alienative category looks "high" because, it will be remembered, we have combined three adaptive styles - rebel, withdrawn, and counter-cultural - into this one category. Depending on the definition one chooses, the resulting distributions will vary. Faculty advisors, for example, rated 38% of their advisees as moral and self-directed and 41% as calculative-conformists (Gerstein, 1971).

Frequency of Response

High	25% (103)
Average	35% (141)
Low	40% (164)

Self-Directed Behavior

As discussed earlier, the act of taking an elective optional Freshman Seminar will be taken as one indication of self-directed learning. The act of taking a second seminar - return rate - is expected to be a more powerful indicator.

RESULTS

Our major hypotheses concern the relationship between form of involvement and seminar taking behavior as an indicator of self-directed learning. In addition, we will explore the relationship between a student's "expected" level of participation and a) his form of involvement and b) his seminar taking behavior. Finally, we will explore the interaction between these three variables.

Form of Involvement and Seminar Taking Behavior

As can be seen from Table 2, there is no significant* relationship between form of involvement and first semester seminar taking behavior. Morally involved students are almost as likely to elect to take a seminar first semester as are their alienated counterparts (46% vs. 39%). The data with respect to return rate, however, strongly confirm our expectations (Table 2). Morally involved students are significantly more likely to return and take a second seminar than their alienated counterparts (45% vs. 27%). Calculative students fall in between these two extremes, exhibiting a 36% return rate. Another way to look at this is to remember that, for the entire population, the return rate is 36%. Morally involved students

* The significance tests made in this report are based on a simple difference of proportions test. The samples are assumed to have identical standard deviations and be of equal sample size. With a sample size of 100, a 10% difference in samples corresponds to a .05 level of significance (two-tailed). With a sample size of 50, a 14% difference in the samples corresponds to a .05 level of significance (two-tailed). Thus when comparing cells with $N \geq 100$, a percentage difference of 10% will be labeled significant at the .05 level. When $N < 100$, then a difference of fourteen percentage points between cells will be considered significant at the .05 level. In all cases, the word "significant" will be used in the above context.

exceed this norm, alienated students fall below it, and the calculative students "conform" to it.*

Expected Level of Participation vs. Form of Involvement

Whether or not a student takes a seminar, the more he sees himself as an active participant and contributor (high vs. low expected level of participation), the more likely he is to feel morally involved (44% vs. 34% vs. 24%) and the less likely he is to feel alienatively involved (38% vs. 47% vs. 53%) (Table 3).

One could ask this same question in another manner, namely, of all those students we classified as alienated (N=192), for example, what percentage were high, medium, low in their expected levels of participation? The results (data not shown) follow the same pattern. (For alienated involvement, for example, the resulting distribution was 21%, 34%, and 45%).

Expected Level of Participation and Seminar Taking Behavior

As can be seen from Table 4, seminar taking behavior first semester is relatively independent of the student's expected level of participation. The high expectation group is only slightly (a non-significant trend) more likely to take a seminar than their low expectation counterparts.

Again, however, the data with respect to return rate strongly confirm our expectation (Table 4). The high expectation group, whom we predicted would experience the greatest sense of congruity or match between their expectations and the seminar environment, have the highest return rate (51% vs. 32% vs. 27%). In other words, while some 27% of the low expectation group do take a second seminar, almost twice as many of those in the high expectation group (51% vs. 27%) behave similarly.

* Two other patterns of seminar taking behavior were examined. Of those students who did not take a seminar at all in their first year (N=172), 30% were morally involved, 19% were calculative, and 51% were alienated. Finally, of those who did not take a seminar first semester but did take a seminar second semester (N=64), 33% were morally involved, 22% were calculative, and 45% were alienated.

Table 2.

Form of Involvement vs. Seminar Taking Behavior

	Moral Involvement	Calculative Involvement	Alienative Involvement
	(N = 134)	(N = 82)	(N = 192)
Percentage of each type who took a seminar first semester	46% (62/134)	44% (36/82)	39% (74/192)
Percentage of each type who <u>returned</u> to take a <u>second</u> seminar, after having taken one first semester	45% (28/62)	36% (13/36)	27% (20/74)

Table 3.

Form of Involvement (moral vs. alienated)* vs. Expected Level of Participation (High, Med., Low)

Expected Level of Participation	Percentage of students who are morally involved	Percentage of students who are alienatively involved
High	44% (47/103)	38% (40/103)
Medium	34% (48/141)	47% (66/141)
Low	24% (39/164)	53% (86/164)

For ease of presentation, we will focus on only the extreme types of moral vs. alienated.

Table 4.

Expected Level of Participation vs. Seminar Taking Behavior

	Expected Level of Participation		
	<u>High</u>	<u>Med</u>	<u>Low</u>
Percentage who took a seminar first semester	44% (47/103)	45% (63/141)	38% (66/164)
Percentage who <u>returned</u> to take a <u>second</u> seminar after having taken a seminar first semester	51% (24/47)	32% (20/63)	27% (17/62)

The Interaction of the Three Variables

We have thus far examined the relationship between our three variables in a pair-wise fashion. We would like, at this point, to examine the interactive effect of all three variables. It will be recalled that neither involvement form nor expected level of participation, taken singly, was related to first semester seminar behavior (Tables 2-4). Combining these two variables does little to change this picture (data not shown). For example, people who are morally involved and have a high expected level of participation are just as likely to take a seminar first semester as are their morally involved low expectation counterparts.*

Both variables were, however, strongly related to second semester seminar behavior -- return rate. Combining these two variables, as can be seen below, yields even stronger results in the predicted direction.

Percentage of each group who
returned to take a second seminar
after having taken one first semester

- | | |
|--------------------------------------------------------------------------------------------------|-------------|
| a) People who are morally involved <u>and</u>
have a high expected level of participation | 61% (16/26) |
| b) People who are morally involved <u>and</u>
have an average expected level of participation | 47% (7/15) |
| c) People who are morally involved <u>and</u>
have a low expected level of participation | 24% (5/21) |

While the sample sizes do become quite small when we examine the combined effect of these variables, the differences are clear and significant.

We have, in the above discussion, taken seminar behavior as the outcome variable. We can also ask the reverse question, in a sense, namely: what is the combined effect of seminar taking and expected level of participation on an individual's sense of moral involvement? For example, we find that of those people who had a high expected level of participation and who took a seminar first semester (N=47), 55%

* Rather than confuse even further an already complicated set of ideas and analysis procedure, we will talk only in terms of moral involvement. In each case unless otherwise noted the same trend appears with respect to alienative involvement.

were morally involved while only 34% of the low participation seminar takers (N=62) were morally involved. This difference becomes even greater when we examine second semester seminar behavior -- when we focus on the returners. For example, of those people who had a high expected level of participation and who returned to take a second seminar (N=24), 67% were morally involved while only 29% of the low participation seminar returners (N=17) were morally involved.

Again, while the sample sizes do become small, the message is clear: those students who both strongly expect to participate in their education and elect to take Freshman Seminar are very likely to report a sense of moral involvement with the Institute.

We now turn to a discussion of these results and their broader implications for the development of self-directed learners.

7 SUMMARY AND IMPLICATIONS

In the introduction to this paper we developed a conceptual framework which dealt, in general terms, with the different ways an individual could become involved with any organization. Three major forms of involvement were discussed; alienative, calculative, and moral. The most appropriate form for the university, particularly one, like M.I.T., actively committed to the development of self-directed learners, was presumed to be moral involvement. Morally involved students have internalized the norms of the system and see the authorities in the system as a legitimate source of influence. We hypothesized that when a student feels a sense of moral involvement with the Institute, he is more likely to become a self-directed learner.

In addition to the concept of involvement, we introduced the concept of congruence or match. The extent of overlap between what a student expects and what a particular educational program offers in the way of opportunities or experiences -- which we call the psychological contract -- could also be expected to influence

student involvement, learning and satisfaction.

In order to explore this general framework in more detail, we chose to focus upon one particular educational option within the M.I.T. community - the Freshman Seminar. The characteristics of this program seemed to fit very well with the requirements deemed essential for the development of moral involvement and self-directed learning. Given the M.I.T. norm of self-directed learning, the act of taking a Freshman Seminar could therefore be viewed as "good" behavior. With respect to the issue of congruence, the Freshman Seminar seemed potentially capable of satisfying a student's need to actively participate in and contribute to his own learning. A high degree of congruence, we hypothesized, would be associated with moral involvement and satisfaction.

As our results clearly point out, the most significant behavioral act would appear to be the taking of a second seminar after having taken one first semester (return rate). First semester seminar taking behavior was not related, in any significant way, to degree of moral involvement with the Institute, to a student's expected level of participation, or to the combined effect of these two variables.

On the other hand, each of our hypotheses was strongly supported when we examined return rate. Students who need to actively participate and contribute to their own learning (an individual characteristic which is quite congruent with a self-directed posture toward learning) were very likely to take a second seminar. Returners were significantly more likely to be morally involved than non-returners. The most morally involved students were those who both had a high need to participate and who did take a second seminar. Put in another way, students who both felt morally involved with the Institute and had a high need to participate were most likely to elect to take a second semester.*

* It is important to emphasize that what we see here is an association between certain feelings a student has toward the Institute at large and his decision to take an elective six unit seminar. What is impressive, to us, is that such feelings have such a strong effect on what can be viewed as a relatively minor aspect of an individual's total life space at M.I.T.

Given the anxiety and confusion which must undoubtedly be characteristic of the entry process into M.I.T., there are many reasons why a student might choose to take a seminar his first semester. To some, the Freshman Seminar provides one opportunity for the self-directed learning they expected to find before they arrived. For others, it might represent a low risk opportunity to try a different mode of learning -- to see if they like it. Still others might view it as the "thing to do" (if M.I.T. offers it, "they" must expect me to take it or my roommate is taking it). Finally, for others it could be viewed as an easy way to accumulate additional units toward graduation (beat the system).

The major sorting out, in a sense, of the diversity of reasons discussed above, seems to come at the point of deciding whether or not to take a second seminar. We are then confronted with the question of causality. Is the seminar environment developing moral involvement in students or is their moral involvement due to an initial selection effect? * Our data do not allow us to answer this question directly. In either case, however, from M.I.T.'s standpoint, this congruent situation represents a desired state since it either: (1) helps develop moral involvement in those students who are initially calculative or alienative; (2) satisfies or meets the needs of those students who are initially morally involved, who within our framework are more likely to be self-directed, and who look to the freshman seminar for need fulfillment; or (3) reflects each of the above influences, and the results represent an interaction of these two effects.

Implications

Based on the assumption that both these previously mentioned effects occur to some degree, there are two major generalizations that can be made in regard to M.I.T.'s efforts to enhance moral involvement and self-directed learning (and reduce alienative involvement) among its students. (1) Effort should be more specifically focused on helping the student find the combination of M.I.T. contributions

* Students who are initially "morally involved" and who have expectations congruent with the seminar environment may be more likely to seek out the seminar experience. The higher percentage of morally involved students would, then, represent an initial selection effect rather than a seminar influence effect (which we see more clearly in the second semester because others have "dropped out" of the seminar.)

(seminars, lectures, study abroad, ESG, USSP, etc.) that is most congruent with his expectations. In other words, a high degree of importance should be placed on the formation of an initially realistic, congruent psychological contract between the student and M.I.T.

(2) The hypothesized success of the seminar environment in the facilitation of moral and the reduction of alienative involvement should not be translated into a demand for more seminars. Instead, the desirable parameters of the seminar (close faculty contact, opportunity for student participation, sense of inclusion, etc.) that appear to help successfully transmit the ideal M.I.T. learning norms should be isolated and more carefully examined. Those parameters that prove to be effective facilitators of self-directed learning should be implemented in other situations and in other combinations to meet a greater variety of student expectations while still providing positive support for the student striving toward self-direction.

Focusing first on the more general issue of improving the congruity of the student's side of the psychological contract, we must address the issue of how M.I.T. can make it easier for an entering student to find a combination of M.I.T. contributions that best match his expectations. In the ideal situation, the student would clearly know what he wanted of the M.I.T. environment and M.I.T. would clearly communicate its offerings and expectations of the student, to the student. With these data, the student could first make a decision to come to M.I.T. or not, depending on M.I.T.'s ability to meet his needs. Second, if the student decided to join he could then make the specific decisions of when, where, and how to participate within the M.I.T. community in order to best meet his expectations.

To the extent that these two ideal conditions -- clearly realized student expectations and clearly communicated M.I.T. offerings and expectations -- exist, the formation of a congruent psychological contract will be facilitated. Thus, M.I.T. can approach the psychological contract problem from two directions. First, it can help the student clarify his expectations and needs in his own mind, and second, it

can provide clearer, more realistic, more "relevant" information to the student concerning the characteristics of its different learning environments.

The problem of helping the student clarify his expectations, needs, and goals is an important issue, but we will do no more here than raise it as a question that deserves further attention, since in this paper we have implicitly assumed that the student does have some set of conscious expectations. On the other hand, we can suggest some types of information that would help the student to make more realistic choices concerning his education at M.I.T.

These suggestions are meant to expand on and operationalize desires such as Paul Gray's to develop "an academic environment in which individual differences in preparation, in needs, in style⁸, in expectations, and in capacity are recognized, developed, and exploited in the educational process," for it was ideas like these that gave the student an opportunity for choice in the first place. The problem we now face is how to successfully communicate the purpose and intent of these programs to the student who must make the decision to participate or not to participate. A first obvious, but difficult, step is to explicitly state the purpose, the goals, the method, and the expectations of the program to the student. This means more than creating more outdated catalog course descriptions; it means increasing attempts by the program "administrators" and perhaps other students to communicate realistically the goals, mechanics, and expectations of the many programs and options available at M.I.T. to the student in his learning terms so he is able to make meaningful decisions. Attempts to provide such information should not only help the student plan and grow, but should also stimulate the program to constantly be listening to its own feedback and understanding the effects it is having on those involved. That is, the job of "teaching" or facilitating self-directed learning means more than simply planning lectures, demonstrations, or discussion groups. It also means "closing the feedback loop" by gathering data on the responses of students to the learning environment. This allows for constant adaptation a

modification by "the system" to create a better M.I.T. - a student match. At the same time this process also increases the student's sense of being an active participant in the development of the learning environment in which he is a member. It is this type of commitment and involvement with and by M.I.T. which is needed to develop an environment that can match the expectations of its students and correspondingly facilitate self-directed learning.

But perhaps more than expectational congruity is needed to successfully facilitate self-directed learning. For the entering student who already has begun to internalize a self-directed learning style, congruence of environmental contributions and his expectations should have a strong facilitating effect. But what of the student who does not yet fully understand the concept of self-direction and who is not exactly sure of the "purpose" of education? That student not only needs a sense of congruity, but he also needs an opportunity to learn and internalize these self-directed learning norms. Correspondingly, our second assumption was that the seminar environment provided the student with that opportunity. That is, the seminar was based on a set of parameters that helped communicate an understanding of and facilitate the internalization of self-directed learning norms.

Further, we said that simply to provide more seminars was not answer in itself, but that we should look at the parameters of the seminar environment which facilitate the learning process and attempt to integrate them in new and/or different environmental settings. Such a strategy would hopefully produce a greater variety of M.I.T. contributions to the student that positively reinforced the ideal learning norms of M.I.T. Thus, the student's chances of finding an expectational match with an environment that positively reinforced self-directed learning norms would be expanded and the probability of his developing a self-directed learning style increased. An example should further clarify this concept.

One characteristic which hypothetically facilitates the learning of self-directed norms is the close student-faculty relationship developed in the Freshman Seminar (Etzioni, p. 307, 1961, Snyder, 1971). It would be useful, therefore, to reproduce this parameter under circumstances different from the seminar environment so that the student uncomfortable in a seminar might still have the benefit of a close faculty relationship. An example of such an alternative would be the development of a work-study program in which the student received credit for working in an interested professor's lab.* This option should be much more attractive than a seminar to a student who does not feel comfortable in a situation where participation is a group norm, but still would like to interact with a faculty member on a more personal basis than is offered in the lecture situation.

Although this example is not a new or unique idea, it does illustrate the need to provide a variety of environments that satisfy different student expectations while still reinforcing the ideal self-directed learning norms of M.I.T. Such flexibility in designing programs and in developing mechanisms for communicating self-directed learning norms is necessary if M.I.T. is to be successful in facilitating the development of self-directed learners. For it is clear that learning is a unique personal experience, and if we hope to affect the student's attitude toward learning we must meet him on his own ground and communicate our ideals in terms that he can understand. Such a task requires the same flexibility, introspection, self-awareness, self-renewal, and growth of the university as it expects of its ideal students.

*The Undergraduate Research Opportunities Program, which already exists, is an example of this kind of activity, which could be examined in the way we have studied Freshman Seminars.

Footnotes

- 1) This information was collected from Professor Gilliland, head of the Freshman Seminar Program.
- 2) Etzioni (p. 307, 1961) indicates that this close personal contact between faculty and students is required for the successful transmission of normative rewards -- i.e., the reinforcement of self-directed learning norms.
- 3) The entire Freshman year was, for the first time in 1969, graded pass-fail.
- 4) Gerstein's paper (1971) focuses specifically on the question of adaptive styles to the Institute. See his paper for a more complete discussion of this counter-cultural concept.
- 5) The alienative student has been classified solely on his system legitimacy score because his anomie score only further clarifies his type of alienation. It is hypothesized that a high anomie score would characterize a normless alienative student; while a low anomie score would characterize a "counter-cultural" alienative student, a student who had adopted norms counter to the M.I.T. community norms.
- 6) One key assumption must be made to use this question as we would like, i.e., as a measure of the students' initial expectations upon entering M.I.T. This question was responded to during February of the students' freshman year, one semester after the student entered M.I.T., and the assumption made is that the student's self image with respect to his level of participation is relatively constant over this period of time. Since the nature of this question is closely linked to the individual's perception of himself, we feel reasonably confident in this assumption. This confidence is based on two factors:
 - a) one semester's time is a relatively short period relative to the time span over which the individual's self-concept was developed and;
 - b) this question is related to an individual characteristic that is fairly independent of his relationship to M.I.T. Bumstead (1971) has shown that the individual's response to this question is a function of social class, thus supporting the argument that this perception is unchanged through one semester at M.I.T.
- 7) Most of this last section appears in very similar form in Sweetwood's thesis (Sweetwood, 1971).
- 8) See Kolb, D.A. (1971) for more detail on the issue of individual differences in learning styles.

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